

ABSTRACT

A separator material of the present invention is a sulfonated nonwoven that comprises a polyolefin ultra-fine short fiber having a fineness
5 of less than 0.5 dtex and other polyolefin short fiber(s). The other polyolefin short fibers include a polyolefin thermal bonding short fiber. At least a portion of the polyolefin thermal bonding short fiber is flattened to bond the component fibers together. The nonwoven has a specific surface area in a range of 0.6 m²/g to 1.5 m²/g and satisfies the following ranges. (1) A ratio
10 (S/C)_E of the number of sulfur atoms (S) to the number of carbon atoms (C) in the nonwoven, as measured by Electron Spectroscopy for Chemical Analysis (ESCA), is in a range of 5×10⁻³ to 60×10⁻³. (2) A ratio (S/C)_B of the number of sulfur atoms (S) to the number of carbon atoms (C) in the nonwoven, as measured by a flask combustion technique, is in a range of 2.5×10⁻³ to 7×10⁻³.
15 (3) A ratio (S/C)_E/(S/C)_B (depth of sulfonation) of (S/C)_E to (S/C)_B is in a range of 1.5 to 12. Thus, a separator material that has a high level of self-discharging performance when charge and discharge are repeatedly performed, a high level of process performance when assembling a battery, and a high level of short-circuit withstand capability; a method of producing
20 the same; and an alkali secondary battery separator, are provided.